

Notice of Allowability

Application No.

10/066,169

Examiner

Arlen Soderquist

Applicant(s)

BONDESTAM ET AL.

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the paper mailed 10-27-05.
2. ☒ The allowed claim(s) is/are 1-35 and 37-43.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

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1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Rabinder N. Narula on December 28, 2005.

The application has been amended as follows:

In claims 20-21, line 1, "1" has been changed to --14--.

In the specification paragraphs [0006], [0037] and [0051] have been amended as follows

[0006] In some ALD reactors, some or all of the precursors may be initially stored in a container in a liquid or solid state. Such reactors are disclosed in co-pending U.S. patent application Ser. No. 09/854,707, filed May 14, 2001, now U.S. Patent 6,368,633, and Ser. No. 09/835,931, filed Apr. 16, 2001, now U.S. Patent 6,783,590, which are hereby incorporated herein by reference. Within the container, the precursor is heated to convert the solid or liquid precursor to a gaseous or vapor state. Typically, a carrier gas is used to transport the vaporized precursor to the reactor. The carrier gas is usually an inert gas (e.g., nitrogen), which can be the same gas that is used for the purging stages.

[0037] The illustrated reactant source 16 includes a container 17 or similar vessel, which is capable of containing solid and/or a liquid reactant material 18 and in which the reactant material 18 can be vaporized. It is generally provided with an inlet nozzle (not shown), which is connected to a carrier gas supply conduit 71 for introduction of a carrier gas into the container 17 from the inactive gas source 12. The container 17 is also provided with an outlet nozzle (not shown), which is connected to the reactant conduit 72, which interconnects the reactant source 16 with the reaction chamber 50 through an inlet conduit 77. The reactant source 16 can be equipped with a heater (not shown) for vaporizing the reactant material 18. Alternatively, feeding heated carrier gas into the reactant source 16 can carry out heating. One embodiment of a reactant source container is described in co-pending U.S. patent application Ser. No. 09/854,706, filed May 14, 2001, now U.S. Patent 6,699,524, the entire contents of which are hereby incorporated by reference herein.

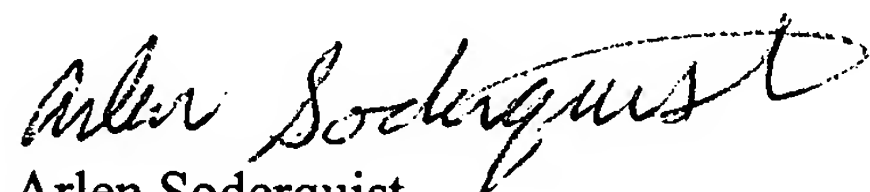
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[0051] The system 100 described above can be extended to include a second reactant source. In such an arrangement, a second reactant source can be positioned within a conduit system in a manner similar to that described above. Such an arrangement is described in co-pending U.S. patent application Ser. No. 09/835,931, filed Apr. 16, 2001, now U.S. Patent 6,783,590, which is hereby incorporated by reference herein. Of course the ALD system 100 can also be expanded to more than two reactant sources in light of the disclosure herein.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arlen Soderquist whose telephone number is (571) 272-1265. The examiner can normally be reached on Monday-Thursday and Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Arlen Soderquist
Primary Examiner